

Application No. 10/759,955  
Response to Office Action

Customer No. 01933

Listing of Claims:

1. (Currently Amended) A plasma generator, ~~in which~~  
comprising:

a plasma forming space  $[[,]]$  into which the air is  
introduced; ~~is provided,~~

5 a dielectric provided in the plasma forming space; and

band plate-like first and second electrodes ~~are~~ arranged in  
opposed relation to each other through ~~a~~ on respective surfaces  
of the dielectric in the plasma forming space, and

10 wherein plasma is generated by discharge caused by applying  
voltage between the first and second electrodes, ~~wherein~~ and the  
first and second electrodes are provided on ~~one surface and~~  
~~another surface~~ the respective surfaces of the dielectric  
~~respectively, and arranged in a state so as to be~~ relatively  
displaced in a surface direction of the dielectric so as to  
15 satisfy ~~the following~~ equation 1, equation 2 and to equation 3:

(Equation 1)

$$\tan\theta_2 = \frac{L1}{d}$$

(Equation 2)

$$\tan\theta_1 = \frac{1}{\epsilon_2} \tan\theta_2$$

(Equation 3)

$$26 \times 10^6 [\text{V/m}] \geq \frac{\cos\theta_1 \cdot \sin 2\theta_2}{d \sin 2\theta_1} \quad V=E_1 (\text{max})$$

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~~wherein~~ where:

20 L1 is a ~~separate~~ separation distance in the surface  
direction of the dielectric between a front end edge ~~position~~ of  
the first electrode and a corresponding end edge ~~position~~ of the  
second electrode, which is located on an outside in a  
displacement direction of the electrodes from the front end edge  
25 position of the first electrode and which is closest to the front  
end edge position of the first electrode, ~~in the surface~~  
~~direction of the dielectric,~~

$\theta_2$  is an angle formed by an imaginary plane including  
the front end edge of the first electrode and the end edge of the  
30 second electrode ~~with a thickness-wise direction across a~~  
thickness of the dielectric,

d is a thickness [m] of the dielectric,

V is ~~the~~ an intensity [V] of the voltage applied  
between the first and second electrodes,

35  $\theta_1$  is an outgoing angle of an electric field in the  
plasma forming space at a boundary surface of the dielectric,

$\epsilon_2$  is a dielectric constant of the dielectric, and

$E_1(\max)$  is a maximum value [V/m] of the electric field  
at the end surface of the electrode.

2. (Currently Amended) The plasma generator according to  
claim 1, wherein the corresponding end edge of the second

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~~electrade~~ electrode is formed by a rear end edge of the second electrode.

3. (Currently Amended) The plasma generator according to claim 1, wherein the corresponding end edge of the second ~~electrade~~ electrode is formed by a front end edge of the second electrode.

4. (Currently Amended) The plasma generator according to claim 1, wherein the angle  $\theta_2$  ~~formed by the imaginary plane with the thickness-wise direction of the dielectric~~ is at least  $45^\circ$ .

5. (Currently Amended) The plasma generator according to claim 1, wherein a ratio ( $L1/d$ ) of the ~~separate~~ separation distance  $L1$  to the thickness  $d$  of the dielectric is 1 to 3.

6. (Currently Amended) The plasma generator according to claim 4, wherein a ratio ( $L1/d$ ) of the ~~separate~~ separation distance  $L1$  to the thickness  $d$  of the dielectric is 1 to 3.

7. (Original) The plasma generator according to claim 1, wherein the voltage applied between the first and second electrodes is 2.5 to 3.5 kV.

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8. (Original) The plasma generator according to claim 4, wherein the voltage applied between the first and second electrodes is 2.5 to 3.5 kV.

9. (Original) The plasma generator according to claim 5, wherein the voltage applied between the first and second electrodes is 2.5 to 3.5 kV.

10. (Original) The plasma generator according to claim 6, wherein the voltage applied between the first and second electrodes is 2.5 to 3.5 kV.

Claims 11-13 (Canceled).

14. (Currently Amended) The plasma generator according to claim 2, wherein the angle  $\theta_2$  ~~formed by the imaginary plane with the thickness-wise direction of the dielectric~~ is at least  $45^\circ$ .

15. (Currently Amended) The plasma generator according to claim 3, wherein the  $\theta_2$  ~~formed by the imaginary plane with the thickness-wise direction of the dielectric~~ is at least  $45^\circ$ .

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16. (Currently Amended) The plasma generator according to claim 2, wherein a ratio ( $L1/d$ ) of the ~~separate~~ separation distance  $L1$  to the thickness  $d$  of the dielectric is 1 to 3.

17. (Currently Amended) The plasma generator according to claim 3, wherein a ratio ( $L1/d$ ) of the ~~separate~~ separation distance  $L1$  to the thickness  $d$  of the dielectric is 1 to 3.

18. (Original) The plasma generator according to claim 2, wherein the voltage applied between the first and second electrodes is 2.5 to 3.5 kV.

19. (Original) The plasma generator according to claim 3, wherein the voltage applied between the first and second electrodes is 2.5 to 3.5 kV.

Claim 20 (Canceled).